

Remarks/Arguments:

The Office Action (1) rejected claims 40, 41, and 46-50 under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Cheng *et al.* (U.S. 5,304,248 or U.S. 5,851,299); and (2) rejected claims 40-50 under 35 U.S.C. 102(b) as anticipated by, or in the alternative, under 35 U.S.C. 103(a) as obvious over Stevens *et al.* (US 5,632,873).

(1) With regard to the rejection under 35 U.S.C. 102(b) as anticipated by Cheng *et al.*, applicant submits that the present invention is not anticipated by Cheng *et al.* because Cheng *et al.* fails to disclose at least one of the two distinct features of the present application, which are a shield being of comparable weight as the workpiece and a shield being replaceable in the way as the replacement of the workpiece.

The present application discloses a wafer processing shield having 2 features:

- being of comparable weight as the workpiece; and
- allowing replacement of the shield in the same way as the replacement of the workpiece.

Applicant submits that Cheng is silent with respect to these two features, and thus fails to disclose at least one of these two features, and thus cannot anticipate the present invention.

With regard to the rejection under 35 U.S.C. 103(a) as obvious over Cheng *et al.*, applicant submits that the present application is not obvious to a person with ordinary skill in the art following the disclosure of Cheng *et al.* due to the following reasons:

a. It is not obvious persons with ordinary skill in the art that the shield of Cheng *et al.* is of comparable weight as the workpiece. From Fig. 2 of Cheng *et al.* (as well as from other figures), the thickness of the shield 50 is estimated to be 4 times the thickness of the workpiece 10, and the diameter of the shield 50 is estimated to be about 3 times the diameter of the workpiece 10. Thus applicant submits that it is not obvious that the shield 50 is of comparable volume as the workpiece 10. Assuming similar material, this implies that it is not obvious to persons skilled in the art that the shield 50 is of comparable weight as the workpiece 10.

The examiner argues that since the shield of the present invention and the shield of Cheng *et al.* are of the same material of silicon, they are obviously of comparable weight. Applicant respectfully disagrees, since if the two shields are of the same material, then their weights are determined by their volumes. Since the volume of the shield of Cheng *et al.* is shown to be much higher than that of the present invention, it is not anticipated that their weights are comparable.

The examiner further argues that existing coating layers can be made to have any predetermined weight. Applicant respectfully disagrees because of two reasons: the first is that the semiconducting coating layer is typically less than 1% of the weight of the wafer, thus it does not contribute much to the overall weight; and the second is that any coating layer would deposit on the workpiece as well as on the shield, thus the weight increase on the workpiece is similar to the weight increase on the shield. In any case, applicant submits that the existence of the coating layer would not render obvious that the shield and the workpiece are of comparable weight following Cheng *et al.*'s teaching.

The examiner also argues that the drawings of Cheng *et al.* are not drawn to scale to discern dimensions. Applicant fully agrees with this argument, but argues further that this fact does not

change the applicant's contention that Cheng *et al.*'s drawings show a shield with non-comparable volume (or weight) as the workpiece. Thus this argument does not disprove the applicant's contention that the disclosure of Cheng *et al.* would not render obvious to persons skilled in the art that the shield is to be comparable weight as the workpiece.

b. It is also not obvious to persons with ordinary skills in the art that the shield of Cheng *et al.* can be replaced in the same way as the replacement of the workpiece. Applicant submits that Cheng *et al.* is silent with respect to the way that the workpiece can be replaced, thus does not disclose any idea about the similar way of replacement between the workpiece and the shield.

With these two basic ideas missing from Cheng *et al.*'s disclosure, applicant submits the disclosure of Cheng *et al.* would not render the present invention obvious to persons with ordinary skills in the art.

(2) With regard to the rejection under 35 U.S.C. 102(b) as anticipated by Stevens *et al.*, applicant submits that the present invention is not anticipated by Stevens *et al.* because, similar to Cheng *et al.*, Stevens *et al.* fails to disclose at least one of the two distinct features of the present application, which are a shield being of comparable weight as the workpiece and a shield being replaceable in the way as the replacement of the workpiece.

With regard to the rejection under 35 U.S.C. 103(a) as obvious over Stevens *et al.*, applicant submits that the present application is not obvious to a person with ordinary skills in the art following Stevens *et al.*'s disclosure due to the following reasons:

a. Stevens *et al.* is silent concerning the shield being of comparable weight as the workpiece.

b. It is not obvious to persons with ordinary skills in the art that the shield of Stevens *et al.* can be replaced in the same way as the replacement of the workpiece, because first, Stevens *et al.* is silent regarding the replacement of the shield 11; and secondly, the disclosure of Stevens *et al.* would make it practically impossible to replace the shield 11 in the way as the replacement of the workpiece 26.

Stevens *et al.* discloses the replacement of the workpiece is col. 6, lines 39-49:

“A robot arm carries a workpiece 26 into the chamber 10 and place the workpiece 26 above the upper tips of the caps 30 and pins 30a. A wafer lift mechanism 32 moves the caps 30 and pins 30a upwardly, to place the upper tips of the caps 30 against the underside of the workpiece 26 and additionally lift the workpiece 26 off the robot blade. The robot blade then retracts from the chamber 10.”

From this description, the movement of the workpiece replacement is parallel to the workpiece surface (or horizontal as shown in Fig. 1).

Fig. 1 shows a shield 22, suspended from the chamber cover, and including an annular, upturn, wall 24. Since the shield 22 and the wall 24 are having an annular shape to hold the shield ring assembly 11/12, applicant submits that Fig. 1 shows that the shield ring assembly 11/12 of Stevens *et al.* cannot be removed horizontally, meaning removing in the way as the removing of the workpiece 26. Applicant submits that the ring assembly 11/12 of Stevens *et al.* is designed to be replaced or removed vertically, meaning lifting up from its resting position.

Thus applicant submits that the disclosure of Stevens *et al.* would not render obvious to persons skilled in the art that the shield ring assembly 11/12 can be removed or replaced in the same way as the removal or the replacement of the workpiece 26.

The examiner argues that the shield of Stevens *et al.* can be *easily* replaced. Applicant fully agrees with this argument, but applicant submits that a feature of the present invention is the replacement method of the shield, the shield is to be replaced in the same way as to the replacement of the workpiece. This feature is not obvious from Stevens *et al.*'s disclosure.

In light of the above, it is respectfully submitted that all of the claims now pending in the subject patent application should be allowable, and a Notice of Allowance is requested. The Examiner is respectfully requested to telephone the undersigned if he can assist in any way in expediting issuance of a patent.

Enclosed is a PETITION FOR EXTENSION OF TIME UNDER 37 C.F.R. § 1.136 for extending the time to respond up to and including today, January 30, 2006.

The Commissioner is authorized to charge any underpayment or credit any overpayment to Deposit Account No. 06-1325 for any matter in connection with this response, including any fee for extension of time, which may be required.

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Respectfully submitted,

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